

AQ Reading Guide LS 5.5

Read the top of page 284. How can we determine if pollutants are decreasing?

California Air quality Timeline

Read 284-286. Refer to the timeline to help you answer the Stop and Think questions below.

1. Look at the California Air Quality timeline and find the year nearest when you were born. What air-quality changes happened in that year? Describe why the change would make a difference in air quality in Los Angeles. How would a change like this also make a difference in the air quality in your community?
2. In 2002, the rules for bus idling were changed. Idling means to leave a vehicle running when it is parked. Why would this be a good rule for lowering air pollutants? How might this rule change the air quality in your community?
3. The most recent change on the list is in 2007, when auto manufacturers were required to label cars to show emissions. How could this rule help to lower air pollutants?

4. Which of the changes listed on your chart for California would be the most important for improving the air quality in your community? Why?
5. Which of the changes on your chart would be the least important for your community? Why?
6. Can you think of any sources of air pollution in your community that are not listed? What are they?

How Much Has the Air Pollution in Los Angeles Been Reduced?

Use the graphs on page 287 to answer the following questions.

1. In 1970, the highest one-hour average for ozone was 0.58 ppm. In what year was this average cut in half? How many years did it take to get to this level?
2. How do the levels of NO and VOC's compare with the decrease in ozone? Do the levels change faster, slower or at the same rate? By what percentage do NO and VOC's decrease in the year that ozone decreases to one-half of its original value?

Stop and Think

1. Which of the three variables, NO, VOC's and sunlight, would the state of California have no control over?

2. As the population increases, the distance traveled on California roads increases each year. What effect would you expect this to have on NO and VOC levels?
3. The formation of bad ozone requires NO, VOC's and sunlight. Temperature also affects smog formation. In LA, ozone tends to be highest in the summer, when the temperature is higher. Also, ozone levels are usually higher in the afternoon. Why do you think it took so long to reduce the ozone in the air in Los Angeles?
4. Why do you think the levels of NO and VOC's change at a different rate than ozone? Think about how NO and VOC's are produced and why they form.
5. The data provides evidence that improvements have been made in the air quality in California. Why do you think these improvements are or are not significant?

How Much Has the Reduction of Pollutants Improved the Air Quality?

Read page 288-289 and use the graph on page 289 to help you answer the questions below.

1. In data, a trend is a change in data over time. What is the trend of this data set?
2. Which year in the data seems the most significant to you? Why?

3. Compare the Smog Alert days data with the timeline. In which years do changes in the laws seem to impact the number of Smog Alert days following that year? Find at least two examples of changes in the laws seeming to make a difference in the Smog Alert days.

Reflect.

1. How would you describe the changes in air quality in Los Angeles? If you lived in LA, what would you be able to do now that you would not have been able to do in the early 1970's?
2. Would you say the air-quality regulations in LA have been a success? Why or why not? What else do you think could have been done?

Read page 290 and use the population chart to answer the following questions.

1. If the population of California had not increased since 1950, how would the air quality of Los Angeles and other cities have been affected? Why?
2. Which of the steps taken by California to decrease air pollution do you think are the most important to consider as the state's population increases? Why?

